Erratum

Erratum: Structural transitions in a ring stain created at the contact line of evaporating nanosuspension sessile drops [Phys. Rev. E 87, 012301 (2013)]

Alexandros Askounis, Khellil Sefiane, Vasileios Koutsos, and Martin E. R. Shanahan

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In our recent article, we presented in Fig. 2 the evolution of excess free energy of an evaporating drop, per unit length of triple line, $\delta\overline{G}$, vs time. The calculation of $\delta\overline{G}$ was based on Eq. (3). Although Eq. (3) is correct, the values of $\delta\overline{G}$ presented in Fig. 2 were miscalculated and we here present the corrections in Fig. 1 below.

This miscalculation leads to the following corresponding changes in the text of the article: The third and fourth sentences in the last paragraph of page 2 that read "At ∼800 s, $\delta\overline{G}$ reaches a maximum value of $\sim 1.7 \times 10^{-5}$ N, which is an order of magnitude larger than what has been reported previously for a similar system [6]. This could be attributed to the more refined calculation of $\delta\overline{G}$, here." should be changed to "At ∼800 s, $\delta\overline{G}$ reaches a maximum value of $\sim 7.5 \times 10^{-6}$ N, which is compatible with what has been calculated previously for a similar system [6]. It may be noted that our calculation of $\delta\overline{G}$ here is more refined." Furthermore, part of the eighth sentence of the same paragraph (on page 3) should be changed from ". . .the first jump requires slightly higher energy, 1.7×10^{-5} N compared to $\sim 1.2 \times 10^{-5}$ N for the rest of the jumps, . . ." to ". . . the first jump requires slightly higher energy, 7.5×10^{-6} N compared to $\sim 6.5 \times 10^{-6}$ N for the rest of the jumps, . . .". The rest of the results and the conclusions of the paper remain unaffected.

A small typographical mistake in Eq. (5) was also found. In the denominator of the first fraction inside the square bracket, radial distance r is missing a power of 2. The correct formula is

$$\bar{v}(r,t,P) = \frac{4\Delta c R(t)}{\pi\rho r\theta(t)}\left[\frac{1}{\sqrt{R^2(t)-r^2}} - \frac{R^2(t)-r^2}{R^3(t)}\right]\frac{D_{\mathrm{ref}}P_{\mathrm{ref}}}{P}. \tag{5}$$

This mistake does not affect any results or conclusions.

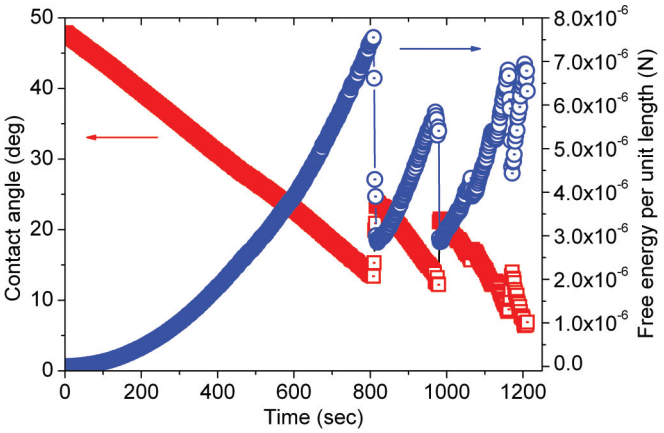

FIG. 1. (Color online) Corrected version of Fig. 2.

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